



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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SEP 7 - 2016

Ref: 8EPR-N

Karl Mendonca, Field Manager
Colorado River Valley Field Office
Bureau of Land Management
c/o Greg Larson, Project Manager
2300 River Frontage Road
Silt, CO 81652

Re: Previously Issued Leases in the White River National Forest Final Environmental Impact Statement, **CEQ #20160178**

Dear Mr. Mendonca:

The U.S. Environmental Protection Agency Region 8 has reviewed the Bureau of Land Management (BLM) Colorado River Valley Field Office (CRVFO) August, 2016 Final Environmental Impact Statement (Final EIS) for the Previously Issued Oil and Gas Leases (PIL) in the White River National Forest (WRNF). Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

Background

The Final EIS evaluates the environmental impacts from cancelling, reaffirming, or modifying 65 previously issued federal fluid minerals leases underlying WRNF lands in western Colorado. These leases were issued between 1995 and 2012 in Mesa, Garfield, Pitkin and Rio Blanco counties, between the towns of De Beque and Carbondale south of Interstate 70, except for one lease northeast of Meeker

The EPA appreciates BLM's efforts during our participation as a cooperating agency for developing the alternatives analyzed in the Final EIS in response to issues and concerns raised through public comments, coordination with cooperating agencies, and in response to the EPA's Draft EIS (Draft EIS) comments of January 8, 2016.

The Final EIS alternatives are briefly described below.

- Alternative 1 (No Action Alternative): The BLM would reaffirm the 65 leases as they were issued.
- Alternative 2: The BLM would modify eight of the leases to address inconsistencies by adding stipulations identified in the 1993 EIS and Record of Decision (ROD) that were not attached to the leases as issued.
- Alternative 3: The BLM would modify each of the 65 leases to match the stipulations for future leasing identified in the Proposed Action from the 2014 WRNF Oil and Gas Leasing Final EIS.
- Alternative 4 (the Proposed Action): The BLM would both modify and cancel leases. In areas identified as open to future leasing by the USFS's 2015 Final ROD for Oil and Gas Leasing on

Lands Administered by the White River National Forest, lease stipulations would be modified as in Alternative 3. All or part of 25 leases would be cancelled in areas identified in the Final ROD as closed to future leasing.

- Alternative 5: The BLM would cancel all of the previously issued 65 leases, plug and abandon all producing wells, remove infrastructure, and reclaim well pads and other ancillary facilities.
- The Preferred Alternative: Based on the analysis presented in the Final EIS and the comments received on the Draft EIS, the BLM's Preferred Alternative for purposes of this analysis is a combination of portions of Alternatives 2 and 4. Alternative 2 would apply to leases that are producing or committed to an exploratory unit agreement or communitization agreement held by production, and Alternative 4, with minor modifications, would apply to non-producing and non-committed ("undeveloped") leases.

The comments below describe remaining concerns related to the Final EIS including General Comments, Air Resources, Green House Gas Emissions and Water Resources.

General Comments

The Final EIS includes a new Preferred Alternative. It is more protective of environmental resources than the No Action (current management) Alternative because it reduces the level of oil and gas development impacts by adding or modifying natural resource protection stipulations for some leases. The Final EIS Preferred Alternative also updates and/or cancels all or part of 25 of the previous leases, which reduces the intensity of potential environmental impacts. The Final EIS includes several alternatives that were considered which would provide more resource protection than the Preferred Alternative and addresses many of the information deficiencies noted in EPA's Draft EIS comments. This letter identifies remaining concerns with the potential for air and water quality impacts associated with future oil and gas development identified in the Final EIS' Preferred Alternative and more current amended CRVFO and WRFO Resource Management Plans (RMPs) related to this project area.

The planning area and adjoining areas have experienced significant oil and gas development. The Final EIS includes an updated Reasonably Foreseeable Development Scenario (RFDS) that provides an estimated projection of unconstrained future oil and gas exploration and development based on a set of assumptions that evaluate potential effects that might reasonably occur as a result of leasing. As discussed in the Cooperating Agency process, the USGS was developing a study (not final until June 8, 2016) that estimates that the Mancos Shale in the Piceance Basin of Colorado contains significantly more technically-recoverable oil and gas than previously known. For example, the study identifies 66 trillion cubic feet of previously undiscovered gas, 40 times more gas than previously assumed.¹ The EPA recommends that the BLM consider the information in the USGS study while reaching its final decision and whether this, or any other, new information would affect the RFDS for these leases (*e.g.* increase the number of potential total wells within the remaining 40 leases under the Preferred Alternative). If the BLM determines that development in the planning area is likely to significantly exceed that predicted in the Final EIS, we recommend committing to appropriate controls at the project analysis stage to assure environmental impacts do not exceed those predicted in the Preferred Alternative of the Final EIS, or if needed, initiating a subsequent EIS process to assess a new RFDS.

¹ <https://www.usgs.gov/news/usgs-estimates-66-trillion-cubic-feet-natural-gas-colorado-s-mancos-shale-formation>

Air Resources

The BLM addressed many of our air resource related comments on the Draft EIS by choosing a preferred alternative consistent with the land use decisions of the most current RMPs that cover this project area. Our air resource protection recommendations below focus on ozone and ozone precursor controls to assure that as the resource is developed, that development is assured to happen without air resource impacts that could affect human health.

Although the project area is attaining the ozone standard, ambient air quality monitoring data for the area includes ozone values near or above the National Ambient Air Quality Standard (NAAQS) of 70 parts per billion (ppb). The Colorado Air Resource Management Modeling Study (CARMMS) platform predicts that the WRNF development activities would measurably contribute to regional ozone levels. Further, the CARMMS Model Performance Evaluation (MPE) indicated that model predictions are biased low for ozone and its precursors, as well as wet sulfur and nitrogen deposition. It is therefore possible that the predicted ozone impacts are underestimated in the air quality analysis presented in the Final EIS. The CARMMS model results, along with the potential for a higher RFDS based on the USGS study, raise potential concerns for air quality in the region if adequate mitigation measures are not applied. Given the air quality and development potential in the area, the EPA recommends the ROD clarify that oil and gas development will be limited to the specific lease parcels in the Final EIS Preferred Alternative, with no new leases in the project area until they can be assessed under a subsequent EIS analysis.

This Final EIS and ROD offer the best opportunity to disclose and mitigate regional and cumulative impacts at the landscape scale. We therefore encourage the BLM to consider options for applying air quality mitigation measures in addition to those committed to in Section 4.2.2.1, through its ROD. The EPA recommends that the ROD include measures that would minimize project impacts and that it ensure emission reduction strategies are employed consistently across the project area (*e.g.* Tier 2 or better drill rig engines, techniques that reduce fugitive and venting emissions, low emission infrastructure such as closed loop systems, and potential controls for sources that may be otherwise uncontrolled). We recommend that mitigation requirements be aligned with those included in the CRVFO, WRNF, and WRFO BLM RMPs since they all affect the same airshed. If the BLM decides not to pursue this recommendation at this time, it will be more important to apply robust near-field and far-field quantitative analysis at the project analysis stage for each project (such as an EIS, or EAs for APDs). In addition, we recommend that the ROD include a notice to lessees that project-level air quality analyses, and additional mitigation, may be required. We note that the BLM's CARPP contemplates such a Lease Notice for the Roan Plateau Planning Area (RPPA) (see RPPA Final RMPA/EIS Appendix J, CARPP Section III.D.1). The EPA has recommended that the RPPA Final RMPA/SEIS, Appendix C – Stipulations, should also include this specific air resource related Lease Notice for the WRNF. Therefore, we recommend the ROD for the PIL Project Area also include these specific air resource related, CARRP based, Lease Notice stipulations for the WRNF.

Green House Gas Emissions and Climate Change Impacts

BLM should not evaluate GHG emissions by comparing them to state emissions. According to CEQ, such comparisons are “not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that

collectively have a large impact”.² Similarly, it is not meaningful to compare the CRVFO planning area GHG emissions to the 2008 USEPA modeled source. We also note that, given the substantial advancements in climate science and associated models since 2008, we do not recommend using the 2008 model in general. Instead, in future NEPA documents, the EPA recommends that the BLM follow the approach outlined by the CEQ’s Guidance regarding the analysis of greenhouse gas (GHG) emissions and climate change.

BLM’s discussion in the FEIS regarding the Social Cost of Carbon (SCC) seems to conflate the calculation of the SCC itself with the application of the SCC to estimate benefits/disbenefits and concludes SCC is too uncertain for use in this analysis. All analyses involve uncertainty, however, and EPA and the other members of the Federal Interagency Working Group on SCC have determined that the uncertainty in SCC estimates does not undermine the use of these estimates.³ The SCC estimates reflect the best available science and methodologies developed by the Federal Interagency Working Group on Social Cost of Carbon. Therefore, the EPA recommends that future BLM NEPA documents more clearly distinguish between the uncertainty involved in calculating CO₂ and other GHG emissions changes associated with the proposed action and alternatives and the usefulness of monetizing those changes by applying the social cost of GHG estimates published by the Interagency Working Group. Please see the OMB website for current estimates and the latest guidance on their application, <https://www.whitehouse.gov/omb/oira/social-cost-of-carbon>.

Water Resources

Wetlands

In order to assure appropriate protection mitigation for wetlands, the EPA recommends that, prior to further lease development activity, a more comprehensive and complete project area wetlands inventory and functionality analysis be required by the ROD. The only wetland type the Final EIS provides acreages for are fens. Alpine wetlands, identified in the Final EIS, are not a specific type of wetland, but an indication of the altitude of the wetland. To accomplish a more comprehensive and complete wetlands inventory and functionality analysis, the EPA recommends use of the Functional Assessment of Colorado Wetlands (FACWet)⁴ to assess the functional quality and type of wetlands that could be impacted. Completing this inventory and analysis provides the BLM and the USFS with additional RMP implementation options and flexibility for setting priorities for wetland protection and impacts

² *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. (Page 11). August 1, 2016.

https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf

³ The courts have also weighed in on this issue. In 2007, the Ninth Circuit Court remanded a fuel economy rule to DOT for failing to monetize the benefits of the CO₂ emissions reductions in its regulatory impact analysis, noting that “the value of carbon emissions reduction is certainly not zero.” In 2014, the District Court of Colorado found the Colorado Roadless Rule Final EIS to be in violation of NEPA due to analysis deficiencies for claiming that an analysis of the impacts of GHG emission changes was categorically not possible. The Court decision noted that the USFS offered a “factually inaccurate justification for why it omitted the social cost of carbon protocol” (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd502186.pdf). In August 2016, the Seventh U.S. Circuit Court of Appeals affirmed the use of the SCC estimates in federal analysis, specifically supporting the use of the SCC estimates in a Department of Energy rulemaking.

⁴ <http://rydberg.biology.colostate.edu/FACWet/>

mitigation. By using a complete and up-to-date inventory and functionality analysis, the functional value can be factored into development decisions. For example, projects with higher impacts on low quality wetlands could be preferable to impacting a lower acreage of high functioning ecologically critical wetlands.

The FEIS uses the 1993 USFS RMP/EIS for identification and protection of wetlands resources rather than the more current 2015 RMP. The EPA recommends the most accurate, up-to-date wetlands information be used to complete the above wetlands identification and functionality assessment.

Groundwater

The Final EIS includes additional information related to groundwater resources in response to comments made on the Draft EIS and the analysis is improved. We offer the following groundwater information and comments for your consideration as you develop your final decision, and for future project-level decisions:

- A geologic map would help inform future site specific project requirements by identifying where fluid movement through faults and fractures is more likely and therefore may require additional protections for groundwater through appropriate wellbore placement and construction/cementing.
- The quote from the USGS report by Thomas and McMahon (2012) that states “most water wells in the vicinity are alluvial” has the potential to be misunderstood. While the statement in the EIS is technically true, it is important to note that almost half of the domestic wells identified in the report are not alluvial. Therefore, it is important to manage potential contamination pathways from surface and subsurface sources.
- Further, the Final EIS makes the case that Colorado Oil and Gas Conservation Commission (COGCC) Rule 317B along with the Colorado Source Water Assessment and Protection (CSWAP) program will assure protection of all aquifers. Importantly, Rule 317B pertains specifically and solely to surface water and is not intended to protect groundwater. Similarly, the Colorado Source Water Assessment and Protection (CSWAP) program applies to both surface water and groundwater, including groundwater which is hydraulically connected to surface water (*i.e.*, alluvial aquifers). However, the CSWAP groundwater protections only apply to those aquifers that currently serve as a public water supply, and includes no additional protections for deeper aquifers supplying individual domestic water wells. Contact John Duggan at CDPHE; 303-602-3534 or John.duggan@state.co.us to discuss CSWAP requirements and protections.
- If groundwater monitoring practices are not implemented for these areas, we continue to recommend that projects in these leases include stringent well construction requirements as well as the mitigation measures for both surface and subsurface pathways described in EPA’s Draft EIS comments.
- The EPA also recommends that future project specific NEPA documents also include an accurate representation of current use of both alluvial and bedrock aquifers within the planning area to better inform an appropriate groundwater monitoring program for the project area.
- Understanding the known impacts within existing lease zones would help identify how specifically, risks to groundwater can be minimized. The EPA recommends future NEPA documents in the planning area provide a more complete citation of information that identifies

such known impacts. For example, when referring to the Thyne 2008 Report⁵, the Final EIS only discusses the types of contamination that Thyne (2008) concludes are not related to O&G operations. The Final EIS does not acknowledge and discuss existing, documented contamination events *related directly to* oil and gas operations, such as those also discussed in detail in the same document (Thyne, 2008). We recommend BLM consider the evidence of existing contamination routes, and including in the ROD specific measures that will prevent future contamination in this geologically complex field as BLM considers its final decision.

- In addition to the above, in order to more accurately reference groundwater impacts due to oil and gas development, and to identify and consider existing impacts and appropriate mitigation measures for the project area, we recommend BLM consider, while making its final decision and include in subsequent NEPA documents, the following additional references:
 - Albrecht, T. R. 2007. Using Sequential Hydrochemical Analyses to Characterize Water Quality Variability at Mamm Creek Gas Field Area, Southeast Piceance Basin, Colorado. Master's Thesis: Colorado School of Mines, 114p.
 - McMahon, P.B., Thomas, J.C., and Hunt, A.G., 2011, Use of diverse geochemical data sets to determine sources and sinks of nitrate and methane in groundwater, Garfield County, Colorado, 2009: U.S. Geological Survey Scientific Investigations Report 2010-5215, 40p.
 - McMahon, P.B., Thomas, J.C., and Hunt, A.G., 2013, Groundwater ages and mixing in the Piceance Basin Natural Gas Province: Environmental Science and Technology, v. 47, 13250-13257. x.doi.org/10.1021/es402473c.

We would welcome the opportunity to discuss these recommendations with you, the USFS WRNF groundwater resource protection representatives, and/or the BLM Colorado State Office Hydrogeologist.

Closing

We have greatly appreciated the BLM's collaborative efforts in the development of this Final EIS. While we support the Preferred Alternative in the Final EIS and updated RMPs, we note that a more current RFDS analyses appears critical for projects in this Basin, and if not completed, then some of our previous comments on the analyses and mitigation measures to protect water resources and air quality would be important to revisit. If further explanation of our comments is desired, please contact me at 303-312-6704, or your staff may contact Nat Miullo, at 303-312-6233 or Miullo.nat@epa.gov.

Sincerely,



Philip S. Strobel
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation cc: Scott

Scott Fitzwilliams, Supervisor WRNF
John Duggan, CDPHE

⁵ https://s3.amazonaws.com/propublica/assets/methane/thyne_review.pdf